The Neighborhood Wrench
Sales and Service LLC

Head Gaskets and Overheating

Customer Education Sheet

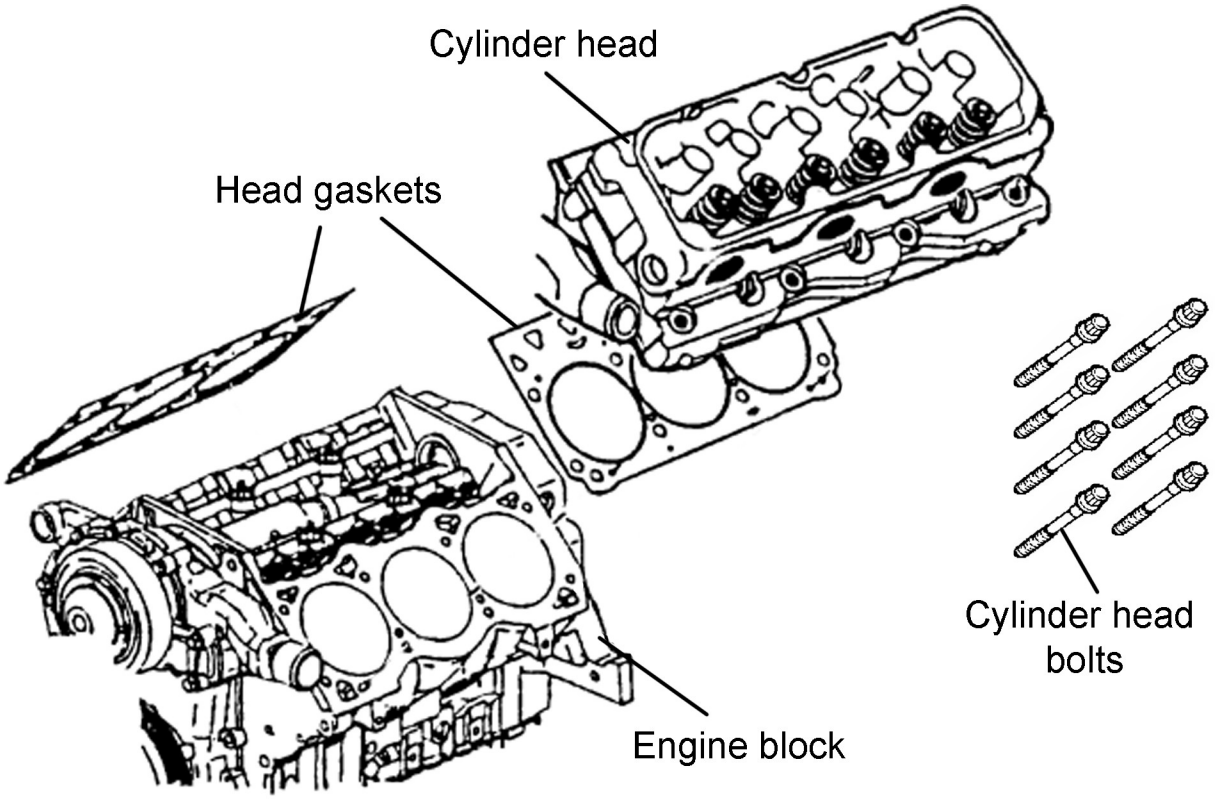
The head gasket sits between the cylinder head and the engine block, and it separates the combustion chamber from nearby oil and coolant passages.

Head Gasket Failure

A “blown” head gasket means the head gasket is damaged, causing a leak between two areas that are supposed to remain separate. This could mean that coolant is getting into the combustion chamber and burning (which causes white exhaust smoke) and/or coolant is getting into the oil (which gives oil a distinctive “milky” color).

Diagnosing a Bad Head Gasket

In most cases it’s pretty easy to tell if a vehicle’s head gasket is blown. Common symptoms of a bad head gasket include overheating, white smoke coming from the exhaust (usually a lot of smoke), a low coolant level (even with no visible leaks), no heat from the vents (common when the coolant level is low), engine oil is milky (looks like chocolate milk), or excessive bubbling in the coolant reservoir. Besides looking for these symptoms, a shop will likely test for a bad head gasket using tool known as a block tester. This tester uses a blue fluid that will turn yellow if the head gasket is bad.



**Note that the second cylinder head and its bolts are not shown in this image*

Head Gasket Replacement

Some cars have one head gasket, others have two (due to having one or two cylinder heads). It depends on the style of engine. To fix it, a technician will need to remove the cylinder head(s) and replace the bad head gasket(s). This involves taking apart everything on the top of the engine (intake, valve covers, fuel rails, etc). Once removed, the cylinder head(s) will need to be checked for cracks. If cracked, it needs to be replaced. The cylinder head bolts will also need to be replaced, as they are designed for a one-time use because they stretch when installed. Then everything has to go back together.

Cost to Repair a Blown Head Gasket

The amount of time it takes to replace head gaskets varies by vehicle, but it's usually about 10 hours or more. With most shops charging around $80 to $100 per hour just for the labor, that makes for a pretty hefty bill. Also, when the engine is taken apart to that level it’s not unusual to find other things that need to be fixed, which means it will take more time and add to the cost. If you're lucky it's just head gaskets and related items that need to be replaced. If you're not so lucky and the cylinder heads themselves are cracked then you'll need new ones, and this can easily double the cost of repairs. In some cases, it might actually be better (and/or cheaper) to just put in a good, used replacement engine. This is especially true if the vehicle’s engine has other significant issues or is high mileage.

How to Prevent Blowing Head Gasket

The number one cause of a blown head gasket is engine overheating due to a low coolant level, so proper cooling system maintenance is vital. The coolant level needs to be full in the reservoir and in the radiator, so get any leaks taken care of as soon as you notice them. If the cooling system is serviced, it’s extremely important that all the air is purged from the system. This isn’t an issue if you have it serviced at a repair facility, but if you’re doing it yourself you need to make sure you know what you’re doing (or leave it to a professional). Some vehicles have pretty difficult bleeding procedures for the cooling system. And of course, try to avoid overheating your engine at all costs. Calling a tow truck is much cheaper than getting engine damage from overheating repaired.

Overheating

Typical engine operating temperature is around 195°F. In most cases, it should not exceed 240°F. Not all temperature gauges have numbers on them, but they are designed so that the needle will be roughly at the halfway point when the engine is at normal operating temperature. Vehicles that don’t have a temperature gauge will usually have an overheating indicator light. If you notice your vehicle is starting to overheat, pull over as soon as safely possible and shut off the engine. Since overheating is the number one cause of blowing a head gasket, it’s crucial that you shut off the engine *before* the needle reaches the red. The sooner you shut it off, the less likely you are to damage the engine or blow a head gasket. If you must drive a very short distance in order to safely pull over, turn off the A/C, roll down the windows, and turn the heater on max. Have the vehicle towed to a service center.